

Marine Auxiliary Machinery-II VTU CBCS Question Paper Set 2018

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10MR65

Sixth Semester B.E. Degree Examination, June/July 2016
Marine Auxiliary Machinery – II

Time: 3 hrs.

Max. Marks: 100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. Explain Marine Vapour absorption system with a neat labeled sketch. (10 Marks)
b. Explain the thermodynamic properties of refrigerant. (05 Marks)
c. Write the chemical formula and chemical name for the following designated refrigerants. (05 Marks)
i) R₁₁₃ ii) R₇₁₇
- 2 a. Sketch the thermostatic expansion valve as filter in refrigeration system, labeling the components parts. State where the valve is located and its function? (15 Marks)
b. Write the classification of compressors. (05 Marks)
- 3 a. Explain the maintenance be the carried out in Marine refrigeration system. (12 Marks)
b. Explain any 2 refrigerant leak detecting equipment. (08 Marks)
- 4 a. Explain the process of charging refrigerant for Marine refrigeration system. (10 Marks)
b. What factors are to the considered while selecting brine? (10 Marks)

PART – B

- 5 a. Explain need of Marine air conditioning? Explain Marine air conditioning circuit. (12 Marks)
b. With references to psychrometry charts
i) What is relative humidity?
ii) What is Dew point?
iii) What is wet bulb temperature?
iv) What is dry bulb temperature? (08 Marks)
- 6 a. Explain marine air conditioning systems with appropriate sketches. (12 Marks)
b. Explain the ventilation system of engine room. (08 Marks)
- 7 a. Explain the treatment of fuels for combustion in Marin I.C Engine. (12 Marks)
b. Explain resident fuels and emulsified fuels with its merits and Demerits. (08 Marks)
- 8 a. Explain the types of lubricants used in marine fuil. (10 Marks)
b. Write the chemical properties of lubricant oil. (10 Marks)

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Sixth Semester B.E. Degree Examination, June/July 2017
Marine Auxiliary Machinery – II

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting
atleast TWO questions from each part.**

PART – A

- 1 a. Explain the principle and components of basic refrigeration system with neat sketch. (12 Marks)
b. Write the properties of refrigerant and effects on environment. (08 Marks)
- 2 a. Draw and explain thermostatic expansion valve. (10 Marks)
b. Explain high pressure cut off with neat sketch. (10 Marks)
- 3 a. Explain indication, remedy for air in the system and moisture in the system. (10 Marks)
b. Explain the charging procedure of refrigeration system with neat sketch. (10 Marks)
- 4 a. Draw the layout of brine distribution system. (10 Marks)
b. Explain the factors affecting the total load on a cargo refrigerating plant. (10 Marks)

PART – B

- 5 a. Explain the necessity of air conditioning on board ships. (06 Marks)
b. Draw and explain ventilation arrangement of CO₂ room. (07 Marks)
c. Draw and explain ventilation arrangement of battery room. (07 Marks)
- 6 a. Explain detuners with examples. (06 Marks)
b. Explain dampers with examples. (06 Marks)
c. Explain barred zone range. (08 Marks)
- 7 a. Draw the fuel oil treatment system diagram from bunker tank to fuel injector. (10 Marks)
b. Explain any 10 fuel oil properties. (10 Marks)
- 8 a. Explain the types of lubrications. (12 Marks)
b. Explain any 8 terminology used in lubrication system. (08 Marks)

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Important Note - 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

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Sixth Semester B.E. Degree Examination, June/July 2015

Marine Auxiliary Machinery - II

Time: 3 hrs.

Max. Marks: 100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. Explain marine vapour compression system. (10 Marks)
- b. Explain the environmental and safety properties of refrigerant. (05 Marks)
- c. Write the chemical formula and chemical name for the following designated refrigerants :
i) R₁₄ ii) R₁₁₃. (05 Marks)
- 2 a. Give the design considerations of compressors. (10 Marks)
- b. Sketch the thermostatic expansion valve as fitted in refrigerant system labeling the component parts. (10 Marks)
- 3 a. With a neat sketch explain how temperature is maintained in different chambers of marine refrigeration system? (08 Marks)
- b. Explain the process of purging marine refrigeration system. (05 Marks)
- c. Explain any 2 refrigerant leak detecting equipments. (07 Marks)
- 4 a. Explain the process of charging refrigerant for marine refrigeration system. (10 Marks)
- b. List the troubleshooting steps taken if the compressor “ short cycle” on low pressure cut out. (10 Marks)

PART – B

- 5 a. Explain the need of marine air conditioning. Explain marine air conditioning circuit. (12 Marks)
- b. With reference to psychrometry charts.
i) What is relative humidity?
ii) What is Dew point?
iii) What is wet bulb temperature?
iv) What is dry bulb temperature? (08 Marks)
- 6 a. Explain marine air conditioning systems with appropriate sketches. (12 Marks)
- b. Explain the ventilation system of engine room. (08 Marks)
- 7 a. Explain the process of obtaining heavy residual fuel used in marine machinery. (10 Marks)
- b. Explain residual fuels and emulsified fuels with its merits and Demerits. (10 Marks)
- 8 a. Write the ideal properties of lubricant oil used in marine field. (10 Marks)
- b. What are the effects of adding additives to lubricating oil? (10 Marks)

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